

State of Louisiana
Department of Transportation and Development (DOTD)
Materials and Testing Section Qualification Procedure
for
Qualified Products List 43

POLYMER COATED STEEL PIPE, PIPE ARCH, AND REPAIR MATERIALS

MATERIAL SPECIFICATION REFERENCE:

DOTD Standard Specifications, 1007.07 (copy attached)
DOTD Maintenance Specifications, MS 192-004 (copy attached)

This reference relates to the manufacture of corrugated steel pipe and pipe arch using polymer precoated steel sheet. This Qualified Product list includes the steel sheet manufacturer, polymer film manufacturer, film laminator, pipe and pipe arch fabricator, and repair materials. The submitter for this list shall be the steel sheet manufacturer in all cases.

PRELIMINARY REQUIREMENTS:

Qualified Product Evaluation Form

Submit a standard "Qualified Product Evaluation Form" to the DOTD Materials and Testing Section Coordinator listed below, along with a letter requesting evaluation for the Qualified Products List (Form Attached).

Product Data Sheets

Include with the submittal product literature which gives detailed explanation of the product manufacturing process, product name, steel sheet manufacturer, polymer coating manufacturer, polymer coating name, polymer coating laminator (if applicable), detailed repair methods, product data sheets of repair compounds, MSDS sheets, etc. The submitter shall submit a letter indicating the pipe fabricator authorized to fabricate pipe and pipe arch using this product. Only one fabricator shall be listed with each submittal.

Sample (to be furnished at no cost to the Department)

Qualification samples for Polymer Coated Steel Pipe, Pipe Arch and Repair Materials shall consist of one - 0.5 by 0.5 m (2 by 2 ft.) 2 mm (14 gauge) steel sheet and one - 0.5 by 0.5 m (2 by 2 ft.) 2 mm (14 gauge) steel sheet with 75 by 25 mm (3 by 1 in.) corrugations. The corrugated sheet shall be produced by the authorized fabricator. A minimum of one liter (quart) of each coat, if applicable, of repair compound shall be submitted. Both samples shall be labeled with the name of product and laminator, film thickness, and appropriate specification references. The submitter shall also submit one can of cold galvanizing compound listed on QPL 23.

TEST REQUIREMENTS:

Laboratory Testing

A material submitted for evaluation shall be tested for conformance to Subsection 1007.07.

Accelerated Weathering Test

(a) Three test panels approximately 100 by 200 mm (4 by 8 in.) shall be cut lengthwise across the corrugations from the corrugated sheet. The panels shall then be scribed lengthwise across the corrugations. The scribe must penetrate into the galvanized steel and use the appropriate scribing tool in accordance with ASTM D 1654. Cold galvanizing compound shall be applied to edges and repair compound shall be applied to edges and half of scribe. After 1500 hours exposure in a salt fog apparatus operated in accordance with ASTM B 117 the panels shall have no rusting in accordance with ASTM D 610, no blistering in accordance with ASTM D 714, no scribe creepage in accordance with ASTM D 1654, and show no sign of delamination at the scribe and on the edge. Discount rust stains at scribe.

(b) Two test panels approximately 75 by 125 mm (3 by 5 in.) shall be cut from corrugated sheet. The panels shall then be scribed vertically. After 1500 hours exposure in an ultraviolet light-water exposure apparatus (QUV) in accordance with ASTM G 154 the panels shall have no rusting in accordance with ASTM D 610, no scribe creepage in accordance with ASTM D 1654, and show no sign of delamination at the scribe and on the edge. Discount rust stains at scribe.

Fabricator Plant Inspection

Representatives of the Department shall visit the fabrication plant to witness the fabrication of pipe, pipe arch, end rerolling and repair procedure. The fabricator shall manufacture pipe of the smallest diameter of each gauge that is intended for production. Excessive coating damage during the pipe fabrication, end rerolling and pipe arching shall result in rejection of this submittal. A 300 by 300 mm (12 by 12 in.) panel which includes a formed lock seam shall be produced by the authorized fabricator. A lock seam sample representing each gauge shall be submitted. The sample with the lock seam shall be tested in accordance with AASHTO T 249.

Total Evaluation Time

Laboratory testing - 4 months

Fabricator Plant Inspection - 1 month

GENERAL:

Upon completion of the evaluation, the submitter will be notified in writing concerning the results of the evaluation and whether the product will or will not be added to the Qualified Products List. The Department reserves the right to reevaluate any product at any time.

PROJECT ACCEPTANCE REQUIREMENTS:

Qualification of a product is not blanket approval for its use. Final acceptance of each lot or shipment is dependent upon test results which shall conform to the established specification requirements and which identify the sample as being representative of the product originally approved along with standard construction inspection requirements for steel pipe which will include damage to the coating and repair procedures.

DISQUALIFICATION:

Any product may be removed from the Qualified Products List should the product fail to comply with specifications or performance requirements. The Department must be notified in writing of any change in product manufacturing. Significant changes may require reevaluation of the product.

REQUALIFICATION:

A product which has been disqualified and removed from the Qualified Products List will be considered for reevaluation only after submission of a formal request along with acceptable evidence that the problems causing the disqualification have been resolved.

DOTD MATERIALS AND TESTING SECTION COORDINATOR:

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